





Fig Culture



—IN—

CALIFORNIA,

—AND—

HOW IT CAN BE MADE A GREAT
INDUSTRY.



FULL TEXT

OF A LETTER FROM THE STATE BOARD OF
TRADE

—TO—

HON. JAMES WILSON,

U. S. SECRETARY OF AGRICULTURE.



"Fruit growing is destined to be the ultimate glory of California."

Horace Greeley, 1859.



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—TO—

HON. JAMES WILSON,

U. S. SECRETARY OF AGRICULTURE.

*Hon James Wilson,
Secretary of Agriculture,
Washington, D. C.*

DEAR SIR:—The California State Board of Trade is an Association of citizens of the State of California, having for its object the encouragement of the industrial interests of the State. With this object in view it solicits your interest in a matter which, if intelligently carried out, must redound to the advantage of this State and to the United States.

For the fiscal year ending June 30, 1896, there was imported into the United States 11,900,700 lbs. of figs valued at the port of export at \$639,512.00, a trifle over 5 cts. and 3 mills per pound. This sum does not accurately represent the value of the importation. In October of each year nearly all of these figs are sold in the City of New York; the Report on Commerce and Navigation showing that of the amount named as imported, 9,981,351 lbs. were imported into that City. These figs are sold at auction and the prices realized are between 9 and 28 cts. per pound. Assuming that the average sum paid was 10

cts. per pound, the amount paid to exporters in foreign countries for figs averages about \$1,200,000 a year. We undertake to show you how this sum can be saved to the people of the United States.

It is well understood that the major portion of fig importations come from Turkey. The statistics of your Department show that of the above named importation, 10,283,906 lbs. came direct from Turkey in Asia and 1,236,754 lbs. came from the United Kingdom. The trade understands that the latter amount represents figs which went from Turkey to England and thence were exported to the United States. These figs are known as "Smyrna Figs" and are the standard fig of commerce. Their excellence consists in having a fertile seed which imparts to the fruit a peculiar fruity flavor, recognized by all consumers of the fruit.

In 1880 there was imported from Smyrna to this State by Mr. G. P. Rixford, a large number of cuttings of the so-called Smyrna fig trees, which were planted in different portions of the State. Much was expected of this importation, but none of the trees have borne any fruit. In the course of time Professor Gustav Eisen, of the Academy of Sciences, announced the theory that the Smyrna fig needed the intervention of a wasp, (*Blastophaga psenes*), to pollenate the female flowers of the edible fig, (*Ficus carica*.) The correctness of this theory has received abundant proof in this State. In 1891 Professor Eisen and Mr. E. W. Maslin, a member of this Board, who had a large plantation of seedling Smyrna figs, discovered at Niles, in Alameda County, a wild fig tree (*Ficus capri*), growing on a plantation of figs which grew from the Rixford cuttings. These Capri figs contained fully developed and abundant pollen. The pollen was transferred by means of a quill tooth pick to about fifty figs growing on trees of the Rixford importation, which for 8 or 9 years had matured no edible fruit. Every fig so pollinated matured into an edible fig—sweet, succulent and bearing (so-called) fertile seed and having the exact flavor of the imported Smyrna fig. This experiment was tried in several succeeding years with like result.

In 1884 the seeds of imported Smyrna commercial figs were planted in Placer County by a member of this Board to the extent of 20 acres. The plants therefrom grew into large vigorous trees

and are still growing, but up to this time, though bearing abundantly, the fruit is a hybrid between the Smyrna fig and the Capri fig and falls to the ground. It has therefore been accepted as a fact in this State that neither the trees growing from imported cuttings of the Smyrna fig tree, nor the trees growing from seeds of the imported Smyrna figs will produce mature edible fruit.

It is now well understood that in Smyrna the commercial fig is not matured without the aid of a wasp called *Blastophaga*. The process by which the edible fig (*figus carica*) is matured is called caprification. In a few words it may be said that the edible fig bears only female flowers, the wild fig, (*figus capri*), bears male flowers. The growers in June or July hang among the boughs of the edible fig a number of the Capri fig from which proceed the wasp, bearing the pollen from the male flowers of the Capri figs. Following their instinct to lay their eggs they enter the edible fig and finding no gall flowers in which to lay their eggs they scatter the pollen from the Capri fig over the stigma of the female flower of the *Carica* fig;—the result being the maturity of the edible figs—all other figs not so fertilized falling to the ground.

Mr. Shinn, of Niles, Alameda County, and Mr. George C. Roeding, of Fresno County, have imported the Capri figs to this State, receiving them in June and July. Upon opening the figs the *Blastophaga* were found in abundance. They seemed at once to grow rapidly and were very vigorous, but all efforts to induce them to enter either the figs, Capri or *Carica*, were fruitless.

It must be understood that the Capri fig has three crops—first the “Mamme,” second the “Profichi,” and third the “Mammoni.” As Professor Eisen has shown, the hibernating “Mamme,” or first crop, has a few male flowers; the second crop or “Profichi” has many male flowers, many gall flowers and no female flowers; the third crop or “Mammoni” has no male flowers, many gall flowers and a few female flowers.

In the second crop of the Smyrna figs nearly all the flowers are perfectly developed female flowers. It appears that the time of the development of the male flowers in the “Profichi” crop of the Capri fig is co-incident with the State of receptivity of the female flowers of the second crop of the Smyrna fig. This occurs in Smyrna, and

would occur in California in June or July of each year.

Enough experiments have been made in California to show that the importation of the *Blastophaga* in the fig detached from the tree will not be available.

Professor Baehr and Professor Eisen, both of the Academy of Sciences, concur in the opinion that the only means by which we can introduce the wasp into this State is by the direct importation of the *figs capri* with formed figs thereon containing the pupa of the wasp. Professor Eisen sent to the State Board of Trade, not less than six times, from Mexico, *Blastophaga* which he found in that country. These wasps were sent to different parts of the State to persons having the *figs carica* and *capri* growing, but with no results. Professor Koeble reports that importations from Mexico will not avail, as in his opinion each variety of *figs* has its own species of *Blastophaga* and it is doubtful if any of the Mexican species will work in the wild or *capri fig*.

Mr. George Roeding reports to the Board that during the past six years he has received from Smyrna at different times specimens of *capri figs* containing *Blastophaga*. Many of the figs arrived in good condition and when cut open insects swarmed in large numbers, but all efforts failed to induce them to enter either the Smyrna or *Capri fig*.

It is the concensus of opinion among scientific and practical persons who have experimented that the only feasible method of introducing the wasp into the State is by the importation in winter months of the *capri fig tree* with the figs upon it.

The method of effecting the establishment of the growing trees, with fruit containing the wasp, may be left to your judgment. But we beg to suggest that some one of experience and tact be sent to Smyrna and engage in the culture of the *Capri fig*. They could be grown in pots until fruited and then ship them to the experimental garden at Washington, or to one of the experimental stations in California, where the outdoor climate is similar to that of the most favorable part of the world. One plan suggested is to send branches with attached figs containing the wasp, placing the ends in moist earth, and giving attention to them upon the voyage. Upon arrival the cuttings could be placed in water. By this means enough moisture would be ab-

sorbed by the branches to induce the development of the fruit in the Spring. It will not do to send the fruit detached. Mr. Roeding reports that experience has taught him that insects cannot be brought out in the pupa state, if the figs are sent detached.

Plantations, both of Carica and Capri figs in California, are ready for this experiment. In 1880 Mr. Rixford's importation of Smyrna figs, and later the importation of Smyrna figs by the late Governor Stanford, are growing in different parts of the State. Capri figs are also growing bearing matured fruit ready for the reception of the wasp, when it can be imported and received, at the proper time.

It is not necessary to enlarge upon the great importance of establishing the culture of the standard commercial fig—known as the Smyrna fig, in this country. We have shown that we pay annually to Turkey in Asia and other minor countries, the sum of \$1,200,000, for imported figs, all of which could be saved to the people of the United States.

When once the culture is established plantations would increase, with a certainty of great profit.

We submit a request that your Department send, as suggested, some one, already advised and experienced, to Smyrna—or if not expedient for lack of funds, then that you interest yourself so far as to obtain from Congress an appropriation of money sufficient to enable you to carry out the object outlined in this paper.

Respectfully yours,

THE CALIFORNIA STATE BOARD OF TRADE.

By E. W. MASLIN,

J. A. FILCHER,

B. N. ROWLEY,

Committee.

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